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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,792	09/16/2003	Won-Joon Choi	ATH-0133	3500
30547 7590 01/25/2007 BEVER HOFFMAN & HARMS, LLP 2099 GATEWAY PLACE SUITE 320 SAN JOSE, CA 95110			EXAMINER WARE, CICELY Q	
			ART UNIT	PAPER NUMBER
			2611	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/25/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/664,792	<b>Applicant(s)</b> CHOI ET AL.	
	<b>Examiner</b> Cicely Ware	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 November 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 101***

1. Claim 1 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

a. With regard to claim 1, applicant recites "A method of improving receiver performance by avoiding bad pilots". Examiner asserts that applicant does not show where the improving takes place in the claim. Therefore making the claim a practical application with no tangible result.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Logvinov et al. (US Patent Application 2003/0231582) in view of Dollard (US Patent 6,934,340)

Examiner asserts that pilot tones are used in synchronization. The tones are used to synchronize two communication devices. Pilot tones comprise a set of bits.

(1) With regard to claim 1, Logvinov et al. discloses using a pilot mask (Pilot mapping/insertion) in the receiver (Pg. 1 [0011], lines 1-7).

However Logvinov et al. does not disclose wherein the pilot mask includes a set of flags, the set of flags associated with certain sub-channels, wherein each flag in the set of flags determines whether its associated sub-channel is usable for pilot tracking.

However Dollard wherein the pilot mask (bit map) includes a set of flags, the set of flags associated with certain sub-channels, wherein each flag in the set of flags determines whether its associated sub-channel is usable for pilot tracking (Fig. 3 (54), 4, 5A, 5B, col. 5, lines 32-56, , 63-67, col. 6, lines 1-17, col. 7, lines 17-25, 31-44, col. 8, lines 48-61).

Therefore it would have been obvious to one of ordinary skill in that art to modify Logvinov et al. to incorporate wherein the pilot mask (bit map) includes a set of flags, the set of flags associated with certain sub-channels, wherein each flag in the set of flags determines whether its associated sub-channel is usable for pilot tracking in order to improve the error rate of an OFDM receiver and the system as the whole by providing the receiver with an improved estimate of channel quality (Logvinov et al., Pg. 2 [0016], lines 1-3).

Examiner asserts that the data packet (including the bitmap) used by the first communication device to the second communication device comprises the pilot sequence, because it is sent in order to synchronize the first and second communication devices.

Examiner asserts that "bit=0=suitable sub-carrier and bit=1=unsuitable" are the flags associated with each sub-channel and because they are associated with each sub-carrier, they are used as masks for the respective sub-carriers.

(2) With regard to claim 2, claim 2 inherits all the limitations of claim 1. Dollard further discloses wherein if a spur (interference) will coincide with a sub-channel, then the pilot mask will not allow that sub-channel to be used for pilot tracking (col. 7, lines 17-60, col. 8, lines 35-42).

(3) With regard to claim 3, claim 3 inherits all the limitations of claim 1. Dollard further discloses wherein if a spur affects a sub-channel, then the pilot mask will not allow that sub-channel to be used for pilot tracking (col. 7, lines 17-60, col. 8, lines 35-42).

(4) With regard to claim 4, claim 4 inherits all the limitations of claim 1. Dollard discloses wherein the set of flags includes 52 flags associated with 52 sub-channels (col. 1, lines 66-67, col. 2, lines 1-5, col. 7, lines 30-44).

Dollard does not disclose 52 flags associated with 52 sub-channels.

However examiner asserts that in the 802.11 OFDM technology 52 sub-channels are included and the set of flags corresponding to the respective sub-channels provides for better synchronization with usable sub-carriers.

Therefore claim 4 does not constitute patentability.

(5) With regard to claim 6, see rejection of claim 1.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2611

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dollard (US Patent 6,934,340), as applied to claim 1, in view of Examiner's Official Notice.

(1) With regard to claim 5, claim 5 inherits all the limitations of claim 1. However Applicant's Admitted Prior Art does not disclose wherein the pilot mask is usable for any data rate.

However Examiner takes Official Notice to the fact that it is inherent that any data rate can be used because the data rate is used to specify the rate at which circuits or other devices operate when handling digital information. Therefore it is inherent that any data rate can be used.

Therefore claim 5 does not constitute patentability.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 571-272-3047. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Art Unit: 2611

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

*Cicely Ware*

cqw  
January 19, 2007

  
MOHAMMED GHAYOUR  
SUPERVISORY PATENT EXAMINER